



United States  
Department of  
Agriculture

Forest  
Service

Arizona Zone  
Entomology and  
Pathology

2500 S. Pine Knoll Drive  
Flagstaff, AZ 86001  
FAX: (520) 556-2130  
Voice: (520) 556-2073

File Code: 3410  
Route To: \*

Date: January 3, 2000

Subject: Douglas-fir Tussock Moth Monitoring Results for Arizona, 1999

To: Tonto, Coconino, Prescott and Coronado National Forest Supervisors

Douglas-fir tussock moth (dftm) is an important native defoliator affecting mixed conifer ecosystems in the inland west. Outbreaks can result in spectacular defoliation and associated top kill and tree mortality. Because outbreaks can develop rapidly and with little warning, an early warning detection system was developed. It is designed to provide 1 to 2 years advance notice that an outbreak may be building. Used widely throughout the western US, in Arizona this system has been in place since 1992. Program consists of a system of insect traps that are placed in several locations in Arizona around the time of adult emergence. In 1999 traps were placed in the Sierra Ancha Mountains, Pinal Mountains, Pinaleno Mountains, Catalina Mountains, Bradshaw Mountains, Mogollon Rim near Payson, and Hualapai Mountains. The Arizona Zone Entomology and Pathology Office coordinates trapping with cooperation from the Safford Ranger District and the Arizona State Land Department. This letter describes results for the 1999-trapping program.

Survey results from 1999 (Table 1) indicate that a small outbreak has developed in the Pinal Mountains near Globe, Arizona. Any plot or area where average trap catch exceeds 40 moths per trap indicates an imminent outbreak. This increase was predicted based on the 1998 trapping results (see our 3410 letter dated 1/11/1999). Abundant caterpillars and some defoliation was noted in mixed conifer forests around the Signal Peak area when traps were placed in July. If this outbreak follows the typical pattern it would continue to build this year, likely peaking this year or next year before declining due to natural causes. If the population continues to build defoliation could be very noticeable this year at the highest elevations of the mountain. Caterpillars could also be very numerous and visible. This is noteworthy because the hairs on the caterpillars, pupae and egg masses can cause an allergic reaction in some people, called tussockosis. No visible defoliation is anticipated at any of the other monitoring locations in 2000. Populations are on the rise again on West Peak in the Pinaleno Mountains but have not reached the 40 moth threshold indicating that visible defoliation could be expected next year.

Many of the mixed conifer forests in the Southwest are quite susceptible to this insect. It prefers sites that may be described as ridge tops, upper slopes, poorer productivity, and mature multi-storied stands dominated by the preferred host species, white fir and Douglas-fir. We are available to provide any needed assistance in managing tussock moth. We can provide more information, help to inform the public of an impending outbreak and its effects and if necessary support suppression of an outbreak. In the long run the most effective measures for preventing damaging outbreaks would be to use silvicultural or other treatments that would reduce density and maintain seral pine or hardwood species in vulnerable areas.



Table 1. 1999 Tussock Moth Trap Results

Plot Name	Location	Total Moths	Average Moths
Icehouse	Pinal Mtns	340	68
Lower Pinal	Pinal Mtns	334	66.8
Workman Creek	Sierra Ancha Mtns	2	0.4
Reynolds Creek	Sierra Ancha Mtns	90	18
West Peak	Pinaleno Mtns	137	27.4
Cunningham	Pinaleno Mtns	0	0
Baker Butte	Mogollon Rim	2	0.4
Washington Park	Mogollon Rim	11	2.2
Spruce Mountain	Bradshaw Mtns	0	0
Potato Patch	Bradshaw Mtns	0	0
Marshall Gulch	Catalina Mtns	6	1.2
Lemon Rock	Catalina Mtns	0	0
Hualapai Mtns	Hualapai Mtns	0	0

If you have any questions concerning Douglas-fir tussock moth feel free to call me at 520-556-2074 or via email at jwilson/r3,coconino.

*Jill L. Wilson*

JILL L. WILSON  
Entomologist

Cc:

District Ranger, Payson Ranger District  
 Jim Mercer, Payson Ranger District  
 District Ranger, Globe Ranger District  
 District Ranger, Pleasant Valley Ranger District  
 District Ranger, Safford Ranger District  
 Dick Streeper, Safford Ranger District  
 District Ranger Santa Catalina Ranger District

District Ranger, Blue Ridge and Happy Jack Ranger Districts  
Bob Celaya, Arizona State Land Department  
Leonard Lucero, Forestry and Forest Health  
Doug Parker, Forestry and Forest Health  
Debra Allen-Reid, NM Zone  
Ann Lynch, Rocky Mountain Research Station,  
Bobbe Fitzgibbon, AZ Zone

*E&P: J. Wilson, jw, 01/03/2000, (520)556-2074*  
*Concur: M. Fairweather, mlf, 01/03/2000, (520)556-2075*